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Dear Sir:

Five companies in the atomic field have been acquired for an undisclosed amount of stock by Baird Atomic, Inc., Cambridge, Mass., manufacturer of nucleonic and other electronic instruments, spectrographic equipment, and infrared systems. The acquired firms, some of them under common ownership, include Atomic Associates, Inc., of New York, and Atomic Associates, Inc., of California, a sales organization handling a number of non-conflicting nuclear products. Also purchased was Atomic Accessories, Inc., New York, a manufacturer and its subsidiary Atomic Film Badge Corp. Atomic Development & Machine Corp., New York, was also taken over by Baird Atomic. Baird Atomic will have a broadened line of nuclear products and stronger sales organization, Davis R. Dewey, II, company president, stated. (Other BUSINESS NEWS, p. 2 this LETTER.)

Vitro Corp. of America, New York, diversified nuclear and advanced technology firm, showed a profit in March, 1959, partially offsetting losses in the first two months of this year, according to president J. Carlton Ward, Jr. Mr. Ward told stockholders at the annual meeting last fortnight that contributing to the improvement was the consolidation of the operations of its Vitro Uranium Co. division into those of Heavy Metals Co., a subsidiary, in which it has an 87½% ownership with the Pechiney group, France, holding 12½% interest. Negotiations have been completed by Vitro Minerals Corp., 50% owned subsidiary, for delivery of 480,000 lbs. per year of uranium oxide to the Riverton mill of the Susquehanna Corp., until the end of 1966. This is a mining rate for Vitro Minerals of more than 100,000 tons of ore per year at the estimated grade of its Wyoming deposits. Negotiations are also underway by Vitro with the USAEC to extend its long-term uranium ore milling contract from 1962 to 1966, Mr. Ward said. Based on current conditions, Vitro should show a better profit in 1959 than reported in 1958, he predicted. (Other FINANCIAL NEWS, p. 5 this LETTER.)

Second sessions of the USAEC's two courses--nuclear reactor operations supervision, and nuclear reactor hazards evaluation, will start Nov. 2, 1959 at Oak Ridge National Laboratory. The courses, for U. S. and foreign students, can accommodate ten in operations supervision, and sixteen in hazards evaluation. Applications, to be made before July 10, 1959, should be to embassies or legations (for foreign students) or to the USAEC's Division of International Affairs, Wash. 25, D.C. (for U.S. students). (Other MEETINGS, COURSES, CONFERENCES, p. 2 this LETTER.)

Uranium procurement contract held by Lucky Mc Uranium Corp., Wyoming producer, with the USAEC, due to expire March 31, 1962, has been extended by the USAEC to Dec. 31, 1966. Effective July 1, 1959 (the contract provides), Luck Mc may increase its ore processing from present 833 tons per day to 980 tons per day; the Commission will buy from the company increased amounts of concentrates. Allocations were also set up for a number of independent uranium producers in the area providing firm acceptance by Luck Mc of their ores for milling and subsequent sale to the Commission. (Other CONTRACT NEWS, p. 3 this LETTER.)

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ATOMIC ENERGY BUSINESS NEWS...

COMMERCIAL NUCLEAR REACTOR BUSINESS SOLD:- The commercial nuclear reactor engineering office in Washington, D.C., of Nuclear Products-Erco Div., ACF Industries, Inc., has been acquired by Allis-Chalmers Manufacturing Co., Milwaukee, Wisc. Allis-Chalmers will also take over from the ACF industries division contractual obligations for the design and construction of power, test and research reactors. Totaling about $10 million, they include a power reactor at Elk River, Minn., and test and research reactors at Wright-Patterson Air Force Base, Dayton, Ohio, and in Sweden and Holland. Amount paid by Allis-Chalmers to ACF was not disclosed. (ACF will concentrate its nuclear energy efforts at its Albuquerque, N.M., division which operates one of the largest facilities in the USAEC's weapons production complex. This Albuquerque division makes "hardware" for the USAEC's Project Rover, which involves use of nuclear energy for missile propulsion, and for the USAEC's Project Pluto, a ram jet nuclear propulsion system. Explaining ACF's divestment of its reactor operations, William T. Taylor, ACF chairman said, "It has become evident that future rewards in the commercial reactor field will accrue principally to companies dominant in the power equipment industry".)

NUCLEAR POWERED PROPULSION SYSTEMS FOR MERCHANT SHIP: Eight proposals embodying various nuclear reactor ship propulsion concepts have been submitted to the British Admiralty, and are being examined for "the best advantages, balanced against the time it would take to put them into operation", an Admiralty office spokesman in London explained. The proposals came from seven industrial groups and the U.K. Atomic Energy Authority. Making proposals were: (1) Group consisting of two British companies, Mitchell Engineering, Ltd., London, and Fairfield Shipbuilding Corp., Glasgow, with a U.S. firm, Combustion Engineering, Inc. Using a direct boiling water reactor, the group is building a small reactor for cargo ships and a larger unit, two of which could propel a large liner, it was claimed. (2) General Electric Co. (England) has designed a gas-cooled reactor at an initial cost of about £3 million; it is at an early stage of development, but the firm said it can be rapidly carried through. (3) Hawker-Siddeley Nuclear Power Co. offered a reactor said to have low initial cost and low operating expense. (4) Babcock & Wilcox Co., offered a pressurized water reactor. (5) Vickers Nuclear Engineering Co. would use a heavy water moderated reactor. (6) Associated Electrical Industries-John Thompson Group proposed a direct boiling water reactor, and could deliver such a system in thirty months. (7) The de Havilland Engine Co. offered a high temperature, gas-cooled reactor system.

NEW BUSINESSES IN NUCLEAR FIELD ESTABLISHED:-Atomic Personnel, Inc., 1518 Walnut St., Phila. 2, Pa., is a new employment agency specializing in placements in the nuclear field. Heading the firm is Arthur L. Krasnow, who has been in nuclear management work with Nuclear Systems division of the Budd Co., Baird Atomic, Inc., and Atomic Instrument Co. Atomic Personnel is offering its services on a nation-wide basis, and is believed to be the only agency of its type in the U. S. with such specialized service.

New B. F. Goodrich-High Voltage Engineering joint venture is Goodrich-High Voltage Astronautics, Inc., which will work on ion propulsion systems for space travel. The firm already has a laboratory scale ion thrust unit in late development stage at its Burlington, Mass., plant. GHV Astronautics will also work on nuclear and solar power generators for ion engines. Chairman is P. W. Perdriau, general manager of Goodrich's aviation products division; president is John Gale, vice-president of High Voltage Engineering.

MEETINGS, COURSES, CONFERENCES...

CONFERENCES:-Third conference on Analytical Chemistry in Nuclear Reactor Technology is scheduled for Oct. 26-28, at Gatlinburg, Tenn. Sponsored by Oak Ridge National Laboratory, general theme of the conference is analysis of reactor materials following the operation of nuclear reactors. Details may be obtained from ORNL, P.O. Box Y, Oak Ridge, Tenn.

MEETINGS:-American Nuclear Society and Health Physics Society have scheduled their annual meetings in sequence, starting June 15, 1959, in Gatlinburg, Tenn. These are the two main scientific societies in the U. S. concerned directly with the use of radioactive materials, instrumentation, and atomic devices. American Nuclear Society is primarily interested in engineering; Health Physics Society has its prime interest in radiation safety. Program and full information may be obtained from the ANS, 86 Randolph St., Chicago 1, Ill.

ATOMIC ENERGY CONTRACT NEWS...

Contract for consultation, design and construction supervision of a $3.5 million pilot plant for reprocessing nuclear power reactor fuels has been awarded by the USAEC to Vitro Engineering Co., New York. The pilot plant, to be at Oak Ridge National Laboratory, Tenn., will combine existing chemical reprocessing pilot plants with new "head-end" cells to permit the dissolution and feed preparation of spent power reactor elements. Process design and chemical criteria for the system are being developed by the Laboratory staff. Current facilities at Oak Ridge which will be included in this complex include a thorex pilot plant, waste metal recovery pilot plant, and fission products pilot plant which will be interconnected to permit the reprocessing of a wide variety of irradiated reactor fuels containing various combinations of uranium, thorium and plutonium metals, oxides and alloys. The facility will also be able to reprocess fuel elements larger than any previously handled.

Eight industry proposals have been received by the USAEC for performance of engineering development work in connection with nuclear power reactors of advanced design capable of producing superheated steam. The work would include development of fuel materials and methods of steam separation and heat transfer. Ultimate objectives are reductions in capital and fuel costs of nuclear power plants. Proposals were submitted by Advanced Technology Laboratories div. of American-Standard, Mountain View, Calif.; Atomics International div. of North American Aviation, Canoga Park, Calif.; Battelle Memorial Institute, Columbus, Ohio; Combustion Engineering, Inc., and its subsidiary General Nuclear Engineering Corp., Windsor, Conn.; General Electric Co., San Jose, Calif.; Nuclear Development Corp. of America, White Plains, N.Y.; Nuclear Metals, Inc., Concord, Mass.; Westinghouse Electric Corp., Pittsburgh, Pa.;

Contract in amount of $600,000 for design study and associated development of a nuclear power reactor has been awarded Canadian General Electric Co., Ltd., by Atomic Energy of Canada, Ltd., the Canadian government organization which operates the Chalk River, Ontario, nuclear research center. The reactor, known as OCDRE (organic-cooled, deuterium-moderated reactor experiment), will be the first Canadian work with use of organic liquids (polyphenyls) rather than heavy water as medium to transfer heat from the uranium fuel to the steam generators. Heavy water will, however, be used as the moderator and fuel will be natural uranium.

Contract held by USAEC with Northern States Power Co., Minneapolis, has been modified by the Commission to provide for a nuclear superheater in the Pathfinder atomic power plant the company will construct at Sioux Falls, S.D., under the USAEC's power demonstration reactor program. The plant wil be of 66,000 electrical kw capacity, using a boiling water reactor, with large volume controlled recirculation of the water coolant-moderator. The contract revision calls for a nuclear superheater located within the reactor core to replace the original specification of a conventionally fired superheater located outside the reactor. The reactor will be fueled with slightly enriched uranium, and the superheater will be fueled with highly enriched uranium. Contract change will increase USAEC financial contribution to the project by $3.3 million, of which $2.5 million will be for research and development and $800,000 for fuel use waiver charges. Total estimated cost of the project is $33.1 million, of which the USAEC will now provide $10.3 million. (Northern States, a group of 11 private mid-west utilities, are using Allis-Chalmers Manufacturing Co., Milwaukee, Wisc., as principal subcontractor to build the reactor. Completion is scheduled for June, 1962.)

NEW BOOKS & OTHER PUBLICATIONS...

Radioactive Self-Luminous Aids to Night Military Activity, by L. J. Boardman. Work at Naval Research Lab., Wash., D.C. 12 pages. No. PB-151,226 (50¢).....Report of Conference on Effects of Nuclear Radiations on Materials; as held at Watertown Arsenal, Oct 1-2, 1957. 85 pages. No. PB-151,001 ($2.25).....New Semi-Annual Listing of all USAEC Unclassified Reports (over 4000) in OTS Collection. List No. 31. (free)--Office of Technical Services, Wash. 25, D.C.

Effects of Nuclear Radiation on Elastomeric Compounds & Compounding Materials, by J.W. Born, et al. Work done at B. F. Goodrich Co., Brecksville, Ohio, for period Jan.-Dec. 1956. 45 pages (Microfilm: $3.60; photostat: $9.30) No. PB-136,237..... Nuclear Shielding Studies, by S.W.W. Shor. Investigations at Laboratory for Nuclear Science, M.I.T. No. PB-136,427. (Microfilm $4.80; photostat $13.80)--Library of Congress ,Wash. 25, D.C.

ATOMIC ENERGY PATENT & TRADE-MARK DIGEST...latest grants...

PATENTS ISSUED April 21, 1959 to PRIVATE ORGANIZATIONS AND/OR INDIVIDUALS:-(1) Radioactivity well log transmission system. Paul E. Baker, Stanley B. Jones, inventors. No. 2,883,548 assigned to California Research Corp., San Francisco, Calif. (2) Radiation thickness measurement. William H. Faulkner, Jr., James W. Shearer, Victor C. Woodworth, inventors. No. 2,883,552 assigned to Tracerlab, Inc., Waltham, Mass. (3) Control means for regulating the outout of x-ray apparatus. Earl V. Reed, Harold B. Vahey, inventors. No. 2,883,554 assigned to Land-Air, Inc.

PATENTS ISSUED APRIL 21, 1959 to GOVERNMENTAL ORGANIZATIONS:-(1) Solvent extraction of thorium values from aqueous solutions. James C. Warf, inventor. No. 2,883,264 assigned to USAEC. (2) Liquid metal compositions containing uranium. Robert J. Teitel, inventor, No. 2,883,330 assigned to USAEC. (3) Inhibited reactor coolants and their use. Robert O. Bolt, Beppino J. Fontana, James R. Wright, inventors. No. 2,883,331 assigned to USAEC. (4) Electronic phase control circuit. John D. Salisbury, Walter W. Klein, Calvin V. Hansen, inventors. No. 2,883,536 assigned to USAEC. (5) Thyratron switch. Robert Creveling, Nolan A. Bourgeois, Jr., inventors. No. 2,883,535 assigned to USAEC. (6) Ion producing mechanism. William M. Brobeck, inventor. No. 2,883,541 assigned to USAEC. (7) Fabrication of neutron sources. John H. Birden, inventor. No. 2,883,553 assigned to USAEC. (8) High voltage generator. George V. Zito, inventor. No. 2,883,551 assigned to USAEC. (9) Pulsed ion source. Wallace D. Kilpatrick, inventor. No. 2,883,580 assigned to USAEC.

PATENTS ISSUED April 28, 1959 to PRIVATE ORGANIZATIONS AND/OR INDIVIDUALS:-(1) Method of segregating thorium compounds. Douglas H. Fenske, Roy T. Sorensen, inventors. No. 2,884,306 assigned to International Minerals & Chemical Corp., New York. (2) Standardizing means. George B. Foster, inventor. No. 2,884,530 assigned to Industrial Nucleonics Corp., Columbus, Ohio. (3) Dose measuring device for ionizing radiation. Robert Richard-Foy, inventor. No. 2,884,532 assigned to Assoc. des Ouvriers en Instruments de Precision, Paris, France. (4) Measuring apparatus for ionizing radiations. Robert Richard-Foy inventor. No. 2,884,533 assigned to Assoc. des Ouvriers en Instruments de Precision, Paris, France. (5) Well logging by selective detection of neutrons. Robert E. Fearon, Jean M. Thayer, inventors. No. 2,884,534 assigned to Well Surveys, Inc. (6) (7) (8) (9) (10) Radioactive gauging system (2,884,535); radioactive gauging characterization device (2,884,536); radioactive measuring system compensation (2,884,537); radioactive gaseous gauging source (2,884,538); multiple source radioactive device (2,884,539). William E. Swift, Jr., inventor; assigned to The Foxboro Co., Foxboro Mass.

PATENTS ISSUED April 28, 1959 to GOVERNMENTAL ORGANIZATIONS:-(1) Plutonium purification process employing thorium pyrophosphate carrier. Edward L. King, inventor. No. 2,884,305 assigned to USAEC. (2) Method of electroplating on uranium. Elmer W. Robel, Ralph F. Wehramm, inventors. No. 2,884,364 assigned to USAEC. (3) Calutron plant arrangement. William P. Dryer, inventor. No. 2,884,527 assigned to USAEC. (4) Gaseous scintillation counter. Charles Eggler, inventor. No. 2,884,529 assigned to USAEC.

TRADE-MARKS TO BE ISSUED:-Mark "Union Carbide Nuclear" with design, filed under SN 55,955 by Union Carbide Corp., New York, N.Y., is to be issued the firm as mark for molybdic oxide, molybdenite, and fused vanadium oxide.

NEW PRODUCTS, PROCESSES, SERVICES...for the nuclear industry...

NEW PRODUCTS:-New dual-purpose device for storing neutron sources and teaching nuclear physics is Model NH-2 neutron howitzer. This is a 35"x23" diameter aluminum vessel filled with 250-lbs. of paraffin. For use as a college classroom demonstrator, a neutron source may be placed in the howitzer at a level with two cadmium-lined ports to produce a collimated neutron beam. Accessories supplied with the howitzer include source-handling tongs; two boron trifluoride detector mounts; and a variety of foils, foil holders, and lucite spacers that fit two cadmium-lined port drawers.--Nuclear-Chicago Corp., 229 W. Erie St., Chicago 23, Ill.

Some 1,000,000 curies of tritium gas are now available from the USAEC, Oak Ridge, Tenn., in an effort to stimulate industrial and consumer uses. Price to licensed users is $2 per curie, plus packaging and handling charge. (Sales in the U.S. of tritium for 10-year period 1948-1958 were 51,998 curies. Expansion of demand began in 1957 when sales were 5,281 curies and reached 39,770 curies in 1958.)

MANUFACTURERS' LITERATURE:-New 48 page catalogue of Radiation Instrument Development Laboratory, Inc., 5737 So. Halstead St., Chicago 21, Ill., describes that firm's new line of scalers.

ATOMIC ENERGY FINANCIAL NEWS...

STOCK OFFERING TO BE MADE:-Nuclear Electronics Corp., 2925 N. Broad St., Phila., Pa., has asked SEC registration of 200,000 shares of its common stock which are to be offered for public sale at $3.75 per share. Offering will be made on a best efforts basis by Charles Plohn & Co., for which it will receive a selling commission of 62½¢ per share plus $37,500 for expenses. Nuclear Electronics is engaged in design and development of nuclear instrumentation, marine electronic equipment, laboratory test equipment, and similar apparatus. Of the net proceeds of its stock sale, $150,000 will be used to pay a bill of Wheaton Glass Co.; $120,000 for a bank indebtedness; $250,000 for research, development, production and marketing; $20,000 for sales promotion; and balance for general working capital. Stuart F. Loucheim Co. owns 21.95% of outstanding stock of Nuclear Electronics, while 55% of outstanding stock of Stuart F. Loucheim Co. is owned by Stuart F. Loucheim, board chairman and F. D. Dannenbaum, secretary, of Nuclear Electronics. They also own addition shares individually, as does John F. Wagenseller, president, Nuclear Electronics.

MUTUAL FUND WITH NUCLEAR HOLDINGS SHOWS GAINS:-Axe Science & Electronics Corp., mutual fund with 12.6% of its common stock investments in firms wholly or partly in nuclear activities, showed increase in total net assets from $8,346,809 on Mar. 31, 1958 to $11,146,891 on Mar. 31, 1959, exclusive of a payment to shareholders of 25¢ a share from net security profits early this year. Investments in Canadian uranium mining firms which contrary to U.S. investments, showed minimal capital appreciation, included holdings in Algom, Consolidated Denison, Gunnar, Northspan, Preston E. Dome, Pronto, and Rio Tinto Co., Ltd. Nuclear equipment manufacturers in the U.S. whose stock is held includes American Machine & Foundry, Babcock & Wilcox, Combustion Engineering, General Dynamics, High Voltage Engineering, and Newport News Shipbuilding. Shares were also held of four U.S. firms doing uranium mining: American Metal Climax; Anaconda; Atchison, Topeka & Santa Fe; and Kerr-McGee Oil Industries.

LARGE CANADIAN URANIUM MINE REPORTS HIGHER QUARTER PROFITS:-Revenues of Consolidated Dension Mines, Ltd., for the first quarter of 1959 were $11,497,000 as compared with $8,304,000 for the comparable 1958 period, president Stephen B. Roman told his shareholders. Net profit for the 1959 quarter was $3,385,000 or 76¢ a share on the 4,451,215 shares outstanding; this compares with net profit of $749,000 or 18¢ a share on 4,450,780 shares earned in the like 1958 period. The company is currently producing and processing 6000 tons of uranium ore per day, most of it for the Canadian government buying agency, Eldorado Mining & Refining, under a $201,895,00 contract it holds from Eldorado. (It is believed that Consolidated Denison's mine and mill, on the shores of Quirke Lake, about 35 miles north of lake Huron, comprise the world's largest producer-processor of uranium ore. Geologists have estimated Consolidated Denison's uranium ore reserves in the Blind River area to be approximately 136,000,000 tons.)

CANADIAN URANIUM PRODUCER LISTED ON NEW YORK EXCHANGE:-Algom Uranium Mines, Ltd., previously listed only on the Canadian exchange, has been admitted to trading on the American Stock Exchange. The company now joins the small group of Canadian uranium firms which have met stringent requirements allowing their listing on the American Stock Exchange; these include Preston East Dome, Northspan, etc. Algom will maintain its listing on the Toronto Stock Exchange.

PUBLIC STOCK SALE PLANNED:-Preparations are underway for a public stock offering by Technical Operations, Inc., Burlington, Mass., according to Frederick C. Henriques, president. Preliminary to this public offering, and to facilitate it, the company's board has recommended a 3 for 2 split of common shares outstanding, and also an increase in the number of authorized shares from 450,000 to 1,000,000, he said. New funds will be used for working capital and for a building program, as well as for "the acquisition of other fixed assets", he explained. (New research facilities are being built at Technical Operations' Burlington laboratory for the increased operations research the firm conducts for the USAEC, office of Civil Defense, etc.; this LETTER, Apr. 28, 1959, p. 4.)

Sincerely

The Staff,
ATOMIC ENERGY NEWSLETTER

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